

DEC 29 2008

December 22, 2008

Certified Mail**91 7108 2133 3935 6890 2705**

Director Air Enforcement
Office of Regulatory Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A, Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460-0001

Re: Northern District of Indiana, Hammond Division
Civil action No. 2:96 CV 095 RL
Western Yorktown Refinery
Paragraph 15: Annual Heater and Boiler Update
and Schedule for Installation of NOx Controls

For Information Only – No EPA Action Required

Dear Madam or Sir:

Attached please find the **2008 Annual Heater and Boiler Update** for the Western Yorktown Refinery, submitted pursuant to Paragraph 15.H.iii of the above captioned Consent Decree (as amended).

As indicated in our Quarterly Progress Report submitted on October 29, 2008, during 2008, Western completed the preliminary design for the installation of ultra-low NOx burners (ULNB) on refinery utility boiler units 1 and 2, as contemplated in our 2007 Annual Heater and Boiler Update. During the design review process, difficulties with the installation of ULNB on the boilers were identified including:

- Significant modifications to the boilers would be necessary in order to meet the 0.04 lb/mmbtu specification for the burners;
- The boilers would need to be de-rated by 20% in order to meet the required NOx emission rate. The reduction in capacity has the potential to cause operational, safety, and environmental issues;
- Even after the necessary boiler modifications and de-rating, other companies have reported that "Current Generation" ULNB's do not always achieve the expected 0.04lb/MMBTU emission rate on boilers in similar service. Therefore, depending on the

actual performance realized following installation, the net emission reductions from boiler ULNB might not meet the decree requirements; and

- The cost of the installation would be high considering the projected life of the existing boilers and the cost of replacement with new boilers;

These concerns led Western to reconsider whether installation of ULNB on the existing boilers is the best emission reduction opportunity. Therefore, we commenced a review of other NOx reduction options to meet the requirements of Paragraph 15.D of the consent decree. Thus far, Western has completed a preliminary engineering review of the installation of ULNB burners on the B-101 Crude Furnace. That review indicated that an installation would be problematic. Due to the furnace configuration and firebox gas flow patterns it is very unlikely that ULNB burners would operate properly in this unit

As EPA is aware, Western assumed ownership of the refinery in June of 2007, and at the time of acquisition, NOx controls had not yet been installed on any heaters or boilers. Since the time of the acquisition, Western has completed the installation of controls on one furnace and has worked diligently to evaluate other potential NOx reduction options to achieve the total level of controls required by the Consent Decree. Given the configuration and age of the heaters and boilers we have evaluated to-date, the application of the various retrofitting control technologies identified in the Consent Decree may not be technically feasible and/or the most cost-effective means to achieve the required levels of NOx controls and reductions. Therefore, as indicated in the attached report, in 2009, Western proposes to complete engineering reviews of three different control options in conjunction with our review of future plans for the refinery (e.g., possible replacement of certain heaters and/or boilers). It is our intent to identify and select an option that fulfills the requirements of the Consent Decree and to develop a schedule for installation of that option for inclusion in our 2009 Annual Heater and Boiler Update.

Should you have any questions regarding this information, please contact Jane Kelley, Environmental Manager at (757) 898-9732.

Sincerely,



John A. Rossi
Vice President, Yorktown Refinery

Attachment

cc:

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via Certified Mail
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Western Refining Yorktown, Inc.
Annual Heater and Boiler Update Report 2008

Listing of Heaters and Boilers >40 mmbtu/hr Firing Capacity

The following information is provided according to Paragraphs 15.D and 15.H.iii of the Second Amendment to the Consent Decree.

Source	Unit	Source Maximum Firing Rate (mmbtu/hr)	Additional he/bo expected to be controlled	control of he/bo in (a)-(c) meet requirements of 15.D	Estimate of Annual Emissions of remaining he/bo not anticipated to be controlled		
			(c)	(d)	(e)	(e)	(e)
			NOx Controls to Be Evaluated for Future Installation (See Note 1) Option 1	Sources to Be Controlled (see note 3) (mmbtu/hr)	Estimated Actual NOx Emission Rate (lb/mmbtu)	Estimated Annual NOx Emissions (tons)	Basis for Estimate (see note 2)
B-101 (Crude Furnace)	CRUDE	311			0.10	136	EF
BOILERS 1	UTIL	137.5			0.10	60	EF
BOILERS 2	UTIL	137.5			0.10	60	EF
BA-101 (DCU)	COKER	97		97			
F-302 (Ultra)	ULTRA	79	NA	79			ST
B-102 (Vacuum Furnace)	CRUDE	79	ULNB	79			
F-303 (Ultra)	ULTRA	50	ULNB	50			
F-101 (DDU)	ULTRA	44	ULNB	44			

Sum (mmbtu/hr): 935
Percent Controls (%):

349
37.3
257

- Notes: (1) ULNB = current generation ultra low NOx burners (0.03 - 0.04 lb/MMBTU)
NGB = next generation ultra low NOx burners (0.012 - 0.015 lb /MMBTU;
Premium of 1.5 times the mmbtu/hr for installation of this technology)
SCR = selective catalytic reduction
Other = other control technology
SD = permanent shutdown
(2) CEM = continuous emission monitor
ST = stack test
EF = AP-42 emission factor used to develop baseline
(3) Must be at least 33.3% of total capacity of units rated at >40 mmbtu/hr (see paragraph 15.D.i)

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Source	Unit	Source Maximum Firing Rate (mmbtu/hr)	Additional he/bo expected to be controlled	control of he/bo in (a)-(c) meet requirements of 15.D	Estimate of Annual Emissions of remaining he/bo not anticipated to be controlled		
			(c)	(d)	(e)	(e)	(e)
			NOx Controls to Be Evaluated for Future installation (See Note 1) Option 1	Sources to Be Controlled (see note 3) (mmbtu/hr)	Estimated Actual NOx Emission Rate (lb/mmbtu)	Estimated Annual NOx Emissions (tons)	Basis for Estimate (see note 2)
B-101 (Crude Furnace)	CRUDE	311			0.10	136	EF
BOILERS 1	UTIL	137.5	ULNB				
BOILERS 2	UTIL	137.5	ULNB				
BA-101 (DCU)	COKER	97			0.10	42	EF
F-302 (Ultra)	ULTRA	79	NA	79			ST
B-102 (Vacuum Furnace)	CRUDE	79			0.10	35	EF
F-303 (Ultra)	ULTRA	50			0.10	22	EF
F-101 (DDU)	ULTRA	44			0.10	19	EF

Sum (mmbtu/hr): 935
Percent Controls (%):

79
8.4

254

Notes: (1)

ULNB = current generation ultra low NOx burners (0.03 - 0.04 lb/MMBTU)
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Premium of 1.5 times the mmbTU/hr for installation of this technology)
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Premium of 1.5 times the mmbTU/hr for installation of this technology)

Other = other control technology

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(2)

CEM = continuous emission monitor

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(3)

EF = AP-42 emission factor used to develop baseline

Must be at least 33.3% of total capacity of units rated at >40 mmbtu/hr (see paragraph 15.D.I)

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Annual Heater and Boiler Update Report 2008**

Listing of Heaters and Boilers >40 mmbtu/hr Firing Capacity

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Source	Unit	For each he/bo controls already installed as per 15.E				For each he/bo expected to have controls installed in 2009 as per 15.E				Additional he/bo expected to be controlled
		(a)	(a)	(a)	(a)	(b)	(b)	(b)	(b)	(c)
		NOx Controls installed?	Control Technology installed	NOx Emission Rate	Basis for Estimate	NOx Controls Expected to Be installed in 2009?	Control Technology installed	NOx Emission Rate	Basis for Estimate	NOx Controls Expected to Be installed in Future?
		(Y/N)	(see note 1)	(lb/mmbtu)	(see note 2)	(Y/N)	(see note 1)	(lb/mmbtu)	(see note 2)	(see note 4)
B-101 (Crude Furnace)	CRUDE	N				N				TBD
BOILERS 1	UTIL	N				N				TBD
BOILERS 2	UTIL	N				N				TBD
BA-101 (DCU)	COKER	N				N				TBD
F-302 (Ultra)	ULTRA	Y	ULNB	0.04	EF	N/A				N/A
B-102 (Vacuum Furnace)	CRUDE	N				N				TBD
F-303 (Ultra)	ULTRA	N				N				TBD
F-101 (ODU)	ULTRA	N				N				TBD

- Notes:
- (1) ULNB = current generation ultra low NOx burners
 NGB = next generation ultra low NOx burners
 SCR = selective catalytic reduction
 Other = other control technology
 SD = permanent shutdown
 - (2) CEM = continuous emission monitor
 ST = stack test
 EF = Burner manufacturer's emission factor
 - (3) Must be at least 33.3% of total capacity of units rated at >40 mmbtu/hr (see paragraph 15.D.I)
 - (4) See attached spreadsheets describing options to be evaluated in 2009

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			Additional he/bo expected to be controlled	control of he/bo in (a)-(c) meet requirements of 15.D	Estimate of Annual Emissions of remaining he/bo not anticipated to be controlled		
			(c)	(d)	(e)	(e)	(e)
Source	Unit	Source Maximum Firing Rate (mmbtu/hr)	NOx Controls to Be Evaluated for Future Installation (See Note 1) Option 1	Sources to Be Controlled (see note 3) (mmbtu/hr)	Estimated Actual NOx Emission Rate (lb/mmbtu)	Estimated Annual NOx Emissions (tons)	Basis for Estimate (see note 2)
B-101 (Crude Furnace)	CRUDE	311	ULNB	311			EF
BDILERS 1	UTIL	137.5			0.10	60	
BOILERS 2	UTIL	137.5			0.10	60	
BA-101 (DCU)	COKER	97			0.10	42	EF
F-302 (Ultra)	ULTRA	79	NA	79			ST
B-102 (Vacuum Furnace)	CRUDE	79			0.10	35	EF
F-303 (Ultra)	ULTRA	50			0.10	22	EF
F-101 (DDU)	ULTRA	44			0.10	19	EF

Sum (mmbtu/hr): 935
Percent Controls (%):

390
41.7

239

Notes: (1)

ULNB = current generation ultra low NOx burners (0.03 - 0.04 lb/MMBTU)
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Premium of 1.5 times the mmbTU/hr for installation of this technology)

SCR = selective catalytic reduction

Other = other control technology

SD = permanent shutdown

(2)

CEM = continuous emission monitor

ST = stack test

EF = AP-42 emission factor used to develop baseline

(3)

Must be at least 33.3% of total capacity of units rated at >40 mmbtu/hr (see paragraph 15.D.i)